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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/787,431

02/26/2004

Shi-Wai S. Cheng

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05/27/2010

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EXAMINER

WARTALOWICZ, PAUL A

ART UNIT

PAPER NUMBER

1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/787,431	Applicant(s) CHENG, SHI-WAI S.	
	Examiner PAUL A. WARTALOWICZ	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-24, 26-32 and 34-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24, 26-32 and 34-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Withdrawn Rejections

The 35 USC 103 rejections of claims 22, 23, 24, 26-32, 34-42, 45, 46 over Ernest in view of Ernst have been withdrawn.

The 35 USC 103 rejections of claims 43 and 44 over Rummler in view of Ernst have been withdrawn.

Response to Arguments

Applicant's arguments filed 2/26/10 have been fully considered but they are not persuasive.

Applicant argues that in Rummler, at best, the exhaust gas flows first through a space provided between catalytic coated ceramic air filter 156 in a quartz glass wall 520 in Fig. 22B.

However, it appears that at least some gas flows through the cellular grate 512 (catalyzed foam filter) and then passes through a secondary combustion air filter 516 (wall flow filter) (fig. 23B). Therefore, it appears that Rummler teaches the limitation of being constructed and arranged so that the gas is able to flow exhaust first through the catalyzed foam filter and then through the wall flow filter.

Additionally, Rummler also teaches an embodiment comprising passing exhaust through to coarse foam filter which can be catalyzed (instant ceramic foam filter, col. 31, fig. 24A) and then through a fine filter (instant wall flow filter, col. 31, fig. 24A).

Applicant argues neither Ernest, Miller, nor Nagaoka do not overcome the deficiencies of Rummler.

However, neither Ernest, Miller, nor Nagaoka are relied upon to teach gas flowing first through the catalyzed foam filter and then flowing through the wall plug filter. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that numerous features in the dependent claims are not shown but that addressing each and every assertion is not necessary because the independent claims are patentable.

However, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 22, 23, 24, 26-32, 34-42, 45, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rummler et al. (U.S. 5853579) in view of Ernst (US 3290876).

Rummler teach a filter system (col. 1) comprising passing exhaust through to coarse foam filter which can be catalyzed (instant ceramic foam filter, col. 31, fig. 24A) and then through a fine filter (instant wall flow filter, col. 31, fig. 24A).

It appears the teaching in Rummler meet the limitation of the fine wall filter surrounding a portion of a catalyzed foam filter in that the coarse foam filter is upstream and the fine filter is downstream such that the fine filter surrounds the rear portion of the catalyzed foam filter.

It appears that Rummler teach the limitations of claim 23 as the exhaust stream is passed to a foam filter, such that the gas has to be passed through a canal (conduit) having an inner surface and a cavity.

It appears that the teaching in Rummler meet the limitation wherein the porous wall is spaced a distance from the rear face of the catalyzed foam filter in that the fine filter is located downstream from the catalyzed foam filter.

Rummler fail to teach an additional filter surrounds a portion of the side edge.

Ernst, however, teaches a decontamination device (col. 1) wherein gases are flowed through multiple tubes and then passed through the top and bottom of the tubes (col. 1, 2; fig. 1, #8, 12) for the purpose of providing efficient gas purification in a relatively small device (col. 3).

As Ernst that gases are flowed through tubes and then passed through perforated walls on the top and bottom of the tubes (col. 1, 2; fig. 1, #8, 12) for the purpose of providing efficient gas purification in a relatively small device (col. 3), it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide the secondary filter on the top and bottom of multiple tubes containing course filters of Rummler wherein the gas flows through the course filter and then passes through the top and bottom of the course filter chamber to the fine filter in order to provide efficient gas purification in a relatively small device.

Regarding claims 27 and 28, Rummler fails to teach wherein the wall flow filter is a single cell wall flow filter.

Ernst teaches that the tubes are surrounded by perforated walls on the top and bottom of the tube (fig. 1, #12, col. 1). These perforated walls appear to be single cell wall flow filter.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide perforated walls as the fine filter in Rummler because the perforated walls would be able to filter solids in the absence of a showing to the contrary.

Regarding claims 24, 32, 37, Ernst teaches an engine upstream (col. 1) connected to an exhaust line (fig. 1, #3, col. 1, 2) that is connected to a housing (fig. 1, #1, col. 1, 2) wherein the a separator has an opening through the separator for the purpose of flowing exhaust gasses through channels and then through filters (col. 1, 2, 3, fig. 1, #9, 11, 12).

As Ernst teaches an engine upstream (col. 1) connected to an exhaust line (fig. 1, #3, col. 1, 2) that is connected to a housing (fig. 1, #1, col. 1,2) wherein the a separator has an opening through the separator for the purpose of flowing exhaust gasses through channels and through filters (col. 1,2,3, fig. 1, #9,11,12), it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a separator has an opening through the separator for the purpose of flowing exhaust gasses through the coarse filter and wall filter of Rummler.

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rummler et al. (U.S. 5853579) in view of Ernst (US 3290876) and either one of Miller et al. (3319793) or Nagaoka (6488842).

Rummler teach a filter system as described above in claim 22.

Rummler fail to teach a plurality of filters.

Miller teaches a filter system (col. 1) wherein it is known to provide multiple filters in a housing in the filtering art (col. 1-2).

Nagaoka teach a filter system (col. 1) wherein multiple filters are disposed in a housing (fig. 1, # 2, 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide multiple filters disposed in a housing in Rummler because it is well known in the art to provide multiple filters for multiple effect and efficiency as taught by Miller and Nagaoka.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz

May 21, 2010

/Stanley Silverman/

Supervisory Patent Examiner, AU 1793